

# AMERICAN EDUCATIONAL MONTHLY.

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VOL. I.—NOVEMBER, 1864.—NO. 11.

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## THE GREAT SCHOOL OF WINCHESTER.

THE next great school of England, after Eton, is that of Winchester. By a paper in the London Educational Times, to which we are indebted for this article, we learn that Winchester School is legally designated as "The College of St. Mary of Winchester, near Winchester," and that it was founded in 1387. It originally consisted of a Warden, 10 Fellows, 76 Scholars, 1 Head Master, 1 Usher or Second Master, 3 Chaplains, 3 Clerks, and 16 Choristers. By an Ordinance of the Oxford University Commissioners, which took effect in 1857, this constitution has been considerably modified; the 10 Fellowships are to be reduced as vacancies occur, to 6; and with the income thus set at liberty, the number of Scholars is to be increased to 100, and 20 Exhibitions are to be founded, not tenable with Scholarships.

The Warden and Fellows are the Governing Body of the College, which, as at Eton (the Statutes of which appear to have been modeled on those of Winchester), consists of two distinct, although closely-connected departments—the College and School.

The general government of the School is vested in the Head Master, subject to such control as is exercised over him by the Warden, or by the Warden and Fellows.

The legal position of the Head Master of Winchester is the same as that of the Head Master of Eton. As Master of the Foundation Scholars, he is an officer of the College, "hired and removable" by the Governing Body, and subject to the superintendence of its head. The control appears, however, to be in practice less strict and

minute than at Eton. The Warden and Fellows have a right to be consulted if there are any great changes—as in the subjects of study, for instance. A Scholar, sentenced to punishment by the Head Master, can appeal to the Warden, who would commonly dispose of the case himself but would bring it before a meeting of the Fellows if that was insisted on. The Warden and the Fellows only, or the Warden with the consent of the Fellows, can expel a Scholar. The Warden and Fellows appoint the Head and Second Masters and the College Tutor; and the Warden also appoints the Mathematical and Modern Language Masters, because it is part of their duty to teach the Scholars.

In May, 1862, when the school was visited by the Commissioners, there were 216 boys, and therefore, 146 Commoners. The number of Commoners was 31 in 1668. During the 18th century it fluctuated greatly, being 87 in 1730, and in 1750, only 10. In 1846 it had risen to 148, but it then began to fall rapidly, until in 1858 it did not exceed 68. "The College suffered," according to Dr. Moberly, the Head Master, "for some considerable time under the reputation of bad health, which had the effect of lowering our numbers considerably." From this depression the School has since been gradually recovering. The opening of the Scholarships to competition, the opening of New College to Commoners, and the establishment of additional boarding houses, have had very beneficial effects.

The Statutes permit a limited number not exceeding 10, of sons of noble and great men, special friends of the College, "filii nobilitum et valentium personarum dieti

"*Collegii specialium amicorum*," to be educated within the College walls, but without charge to the College. It appears, by old College accounts, that such boys were in fact received, and that they paid, not for their instruction, but for their commons or board. These are regarded as having been the forerunners of the present "commoners," or non-foundation boys. At what time commoners ceased to board within the college does not appear. In 1681, says Mr. Walcott, we find, according to the roll, two commoners in college, three in the warden's house, and the remainder out of college. The distinction, he says, did not disappear till 1747.

There is nothing in the Statutes to show that the founder of Winchester contemplated, as the founder of Eton certainly did, the resort of other boys to his school besides the scholars and the small privileged class above mentioned. The head master has, however, long been in the habit of taking boarders, who are said, in the dialect of Winchester, to be "in commoners," and are regarded as successors of the class from whom they seem to have inherited the name. The number was formerly limited by the warden and fellows to 130, but this limitation exists no longer. Two additional boarding-houses were opened in 1862; a third, to hold 25 boys, was then building, and it was in contemplation to establish a fourth.

Boys undergo no examination, the scholars excepted, before admission to the school; but if a boy is sent to school whose attainments are not such as to enable him to join the lowest classes with good prospect of advantage, he is not received. This happens occasionally, but rarely. There are no limits of age, and there is no rule as to the highest form in which a boy can be placed on admission. Boys seldom come at an earlier age than eleven, or so late as sixteen, and in practice are never placed higher than in the senior part of the fifth, and very rarely so high. A scholar stays on an average five years at school, a commoner between three and four.

The classical staff comprises, beside the head and second masters, a third and a fourth master respectively taking classes in school, an assistant to the head master,

who likewise takes a class, and three composition masters, who are employed in looking over and correcting the exercises and compositions of the whole school, except the upper sixth. One of these, called the "College Tutor," performs this office for scholars; the other two, called "Tutors in Commoners," for the commoners. The two latter are also employed to preserve order and discipline in the head master's boarding-house.

In 1861 the arrangement of forms (or "Books," as they are called at Winchester) and sub-divisions of forms, was as follows:

|                  |  |
|------------------|--|
| Sixth Book.....  | { Upper Division.<br>Lower Division.   |
| Fifth Book {     | { Senior Part. { Senior Division.<br>Middle Part. { Junior Division.<br>Junior Part. |
| Fourth Book..... | { Senior Division.<br>Junior Division.   |

There were no lower forms. The whole school was thus distributed into eight ascending divisions.

An institution may be mentioned here which is among the peculiar features of Winchester, though it has now lost much of its former importance—that of "Boy Tutors." To each of the 10 senior boys in college, some of the juniors are assigned as pupils. It is his duty to overlook and correct a certain part of their exercises before they are shown up, and to help his pupils when they want help in their lessons. He is responsible also, in some measure, for their general conduct and diligence, and is the person of whom the head master would make inquiries if he had reason to think that any of them were going on amiss. For each pupil so placed under his charge the "Boy Tutor" receives two guineas a year from the pupil's parents. This practice has been traced to a provision in the Statutes, whereby the founder directs that "to each scholar of his own kindred there should always be assigned, by the Warden and head master, one of the discreeter and more advanced scholars to superintend and instruct them in grammar under the head master all the time that they should remain in the college." Each of these instructors was to receive for each pupil 6s. 8d. a year out of the funds of the college. The functions of the boy tutor were much circumscribed, about 26 years ago, by the

appointment of the college tutor, or scholars' composition master—a change introduced by the then warden on the advice of the second master, the present bishop of St. Andrew's, who had been educated at Harrow, and against the opinion, though not against the positive dissent of Dr. Moberly, who was then, as now, head master. Formerly the boy tutor took all the compositions of his pupils; now he takes only a small part of them.

Some traditional peculiarities in the classical teaching of Winchester may be here mentioned. One is the system called "pulpiters," probably from the rostrum formerly used for the purpose—of assembling periodically all the boys of the first three divisions, for construing lessons in certain authors, when some of the seniors construe first in the presence of all the rest. Another is the practice of writing a Latin epigram, called a "vulgar," thrice a week, which is thought to bring out cleverness, and cultivate neatness of expression. Another, again, is that of devoting a week, or a week and a half, in summer, to what is called "standing up." The work of "standing-up week," consists chiefly in repeating portions of Greek and Latin grammar, and in repeating and construing considerable quantities of Latin and Greek verse or prose, which the boy has been able to store up in his memory. One lesson of English verse is allowed to be taken up, and one of Euclid. It is confined to the boys below the senior part of the fifth. The comparatively small quantity of translation which is done, and the undue proportion of original composition in the classical languages, can hardly be counted among the peculiarities of Winchester. Little or no Greek prose is written, even in the highest form.

Neither ancient nor modern history is taught in set lessons, and ancient history does not enter as a separate subject into any of the school examinations. Questions in portions of English history, specified beforehand, are set in the general half-yearly examinations lately instituted, to which we shall refer hereafter, and in the examination for the Goddard scholarship; and this leads, in the latter case, to a very careful reading of the history of a considerable

period. There is a prize also of £5 for an English essay on a historical subject.

Both mathematics and arithmetic are taught in every division of the school, and the amount of time allotted to them, especially in the upper part of it, is unusually great. Seven or eight hours a week are devoted to these subjects by the first three divisions, the lowest of which is commonly reached at about 13 or 14; three or four hours by the rest of the school. The marks for mathematics are allowed to count for about one-fourth of the weekly total. The highest subjects read in the upper sixth were, in 1861, conic sections and trigonometry.

Every boy is obliged to learn either French or German during the whole time that he remains at school, but it is not deemed practicable to allow both languages to be taught at the same time. For learning German there is an additional payment of £2 2s. a year, beside the £1 10s. charged for the French masters. The number learning it in 1862, were about 40, and consisted chiefly of older boys, or of boys who had been in Germany or had some family connection with it.

There are two French masters, both Frenchmen; during ten years preceeding 1862 there was only one, probably on account of the diminished numbers of the school. An hour and a half in every week is assigned to two French lessons, occupying three-quarters of an hour each. Every lesson, M. Angoville thinks, ought to take an hour to prepare. The French master has the power to set impositions for intemperance or misconduct during lessons, but no authority out of school. The marks for modern languages count for about one-eighth in the weekly total, and French and German enter into the half-yearly examination.

Natural science is taught by lectures, about ten or twelve of which on some branch (such as chemistry, geology, electricity, &c.) are delivered every summer, between the Easter and Midsummer holidays, by lecturers engaged for the purpose from time to time. All the boys are required to attend.

There is also a drawing master, who has a few scholars, and some of the boys take

lessons in music from out-door professors.

The system of promotion at Winchester is nearly the reverse of that of Eton. At Eton a boy rises in the school chiefly by seniority; at Winchester his rate of progress is determined by his success in an incessant competition, in which every lesson and every exercise counts for a certain numerical value, and which never pauses or terminates till he reaches the sixth book. Places are taken in every division below the sixth book, and each boy receives for each lesson a number of marks answering to the place he holds in the division at the end of the lesson. Thus, if he is twentieth from the bottom he receives twenty marks. Marks are likewise given in the mathematical and modern language classes, but the number of marks which can be given for a French or a mathematical lesson is limited to a maximum, which is supposed to represent roughly the relative value of each of those studies compared with classics. The highest marks which a good mathematician can gain are one-fourth, the highest that a good French or German scholar can gain are one-eighth, of the grand total. At the end of every week the marks gained for all the lessons are added up, and the same thing is done at the end of every month. This record of each boy's progress is called the "Classicus paper." The promotion of each boy at the end of a half-year, depends on the number of marks he has obtained in the "Classical paper," during that half-year, with the addition of those which he has gained (if his place in school is below the senior part of the fifth) for "standing-up" at the end of the summer half.

A consequence of this system is that a clever and diligent boy rises quickly to the top of the school, and that the duller or more idle boys are left to stagnate at the bottom of it. There is the advantage of a sharp and unceasing stimulus applied to those who are capable of rising, and the disadvantage, such as it is, which a steady, but slow and backward boy suffers from the disheartening effect of being constantly outstripped and left behind.

From this cause, and from the fact that boys are admitted at almost any age, the number of great boys in the lower classes

doing very elementary work is singularly large. In the lowest class, doing Greek *Delectus* and a little *Ovid*, there were in 1861 two boys of 16; one very nearly 17; two others not far short of 16, and the average age of the whole division was very nearly 15, and higher than that of the division next above it, which was 14 years and 4 months.

The absence, until very recently, of any general periodical examinations, has been among the peculiarities of the Winchester system. There have been regular examinations for prizes, but the boys who compete for prizes form, of course, but a small proportion of the school. The peculiar stimulus which periodical examinations afford, and the particular mental discipline which they supply, have thus in a great measure been wanting, and the school has lost the assistance which they give in correcting the defects inseparable from the system of "taking places" as a method of promotion. Dr. Moberly has lately made an innovation in this respect by instituting a half-yearly examination, turning partly on the classical work of the previous half-year, but comprising also papers in French and German, and in set portions of English history, of geography, and of the Old Testament.

The system of promotion above described and the stimulus afforded by it, do not, however, reach to the top of the school, nor do the half-yearly examinations; they cease on entrance into the sixth book. Until about 12 years ago, promotion by taking places stopped on entrance into the senior part of the fifth, that is, about half-way up the school, and at a point which a boy generally attained when about 13 or 14 years old. From that time till he stood for New College his place was never changed, and the examination which he eventually underwent for New College was formerly little more than nominal.

New College is now thrown open to the commoners, and the examination for it is real and competitive. The sixth-form boys have now, therefore, a stimulus to exertion which the upper school had not before, and Dr. Moberly trusts to this, to the examination for the Goddard scholarship, and to the various school prizes, to combat the tendency to stagnation, which is likely

to begin at the point where "taking place" ends.

The hours of work and play at Winchester, like most other parts of the system, are fixed by ancient usage. The boys prepare, as well as say their lessons in school, and the rule is to allow, for every lesson an hour long, an hour of preparation. Speaking roughly, on two days in the week a boy is in school between six and seven hours, on the other days between four and five hours, besides the time given to composition or private work in the evenings. Of the school-hours, he spends about half in preparing his lessons, and the other half in saying them. A hard-working sixth-form boy would generally work about seven hours a day; before an examination, perhaps nine or ten hours. If he also made a study of cricket, he would probably give, one day with another, three hours a day to the game; and it is worth observation, not only that Winchester, with very inferior numbers, has played a great number of successful matches against Eton and Harrow, but that the hard-working Winchester boys are able to contend successfully with the idle boys.

Winchester, the oldest of our great schools, undoubtedly produced the earliest type of what is called the monitorial system, and appears to have preserved that type almost unaltered during several centuries. The beginning of the system may be traced to the founder's statutes.

"In each of the lower chambers let there be at least three scholars of good character, more advanced than the rest in age, discretion, and knowledge, who may superintend their chamber-fellows in their studies, and oversee them diligently, and may from time certify and inform the warden, sub-warden, and head master, respecting their behavior and conversation, and progress in study."

There were six chambers, and therefore 18 "Prefects," and the number was not increased when the original school-room was turned into a seventh chamber. The 18 chamber-prefects still exist; of these, eight have power only in the inner quadrangle, practically only in the chambers; the remaining ten (*plena potestate præfecti*) have power everywhere; and five of the ten,

called officers, are invested also with special authority, and have charge respectively of the hall, school-room, library, and chapel. The prefect of hall is the chief of these five, and has large powers of general superintendence; he is "the governor of the school among the boys," and their organ of communication with the head master. All the prefects, except the five and the ten respectively, obtain their positions by seniority; the five officers are chosen by the warden, with the advice of the head master, with reference to their character and power of influencing their schoolfellows. All are invested with authority by the warden in a traditional and appropriate form of words (*præficio te sociis concameratibus—præficio te aula, &c.*). They are empowered to punish corporally. It is not the practice for them to set impositions.

The system of fagging among the scholars is connected with that of government by prefects. The 18 prefects, and they only, have power to fag; all the scholars who are not prefects are, strictly speaking, liable to be fagged, but the burden falls chiefly on those more recently elected, whatever may be their position in the school. A junior scholar who was examined by the commissioners, and who had come in at the head of his election a few months before, was, at the time he was examined, in the senior part of the fifth, which is considerably above the middle of the school. It would be a year and half, he informed us, before he ceased to be liable to be fagged. The system is somewhat complicated. A boy may be "valet" to one prefect, whom he waits on in his chamber; "breakfast fag" to another, whom he attends at tea—not at breakfast—in hall; and liable also to be sent on errands, and to be obliged to field at cricket, at the bidding of any prefect who may happen to want those services. This would ordinarily be the case with a boy who was not one of the seven juniors, but was just above them. If he were one of the seven juniors, he would be general fag (instead of "valet") in his own chamber.

The expenses of a commoner boarding in the head master's house are estimated by Dr. Moberly at about 115*l.* [about \$557] a



year, including travelling money, pocket money, and the tradesmen's bills. There are three boarding houses in addition to the head master's—two kept by assistant masters, and the other by a retired tutor—but the expenses appear to be about the same in all. The "scholars," who are elected annually by competitive examination, are boarded, lodged, and educated without any expense to their parents beyond a payment of thirty shillings a year to the French master (with an addition of two guineas if

they learn German), and if not prefects, a further payment of two guineas to the "boy tutor." The system of open competition for the scholarships (of which there are on an average about ten vacant every year), was rendered obligatory in the college by an ordinance of "the Oxford University Commission," in 1854, and appears to have worked well. Notice of every "election" is given in the *Times*, and circulars conveying every information are sent to every person who makes inquiries on the subject.

### THE POSSESSIVE AUGMENT

THE addition to the English noun in the possessive case has always been somewhat of a mystery. Some assert it to have arisen from the abbreviation of his—as "John's book" is equivalent to "John his book"—a mode of writing the phrase which had not entirely passed out of vogue in our younger days. But then there is the possession of the female, and "Mary'r book," which would be the abbreviation for "Mary her book," is not written at all.

One writer holds that the noun is converted by the *s* into a possessive adjective; and this can be very well supported also. Perhaps the best explanation is to proclaim the existence of a real genitive case in English.

A recent writer on this subject, Mr. James Manning, enumerates nineteen instances of the use of the possessive addition, and discusses each with considerable care. Some of these are, however, only repetitions, for "William's book" and "the book is William's" amount to the same thing, the word "book" being expressed in the one instance, and implied in the other. So with "Mary's pencil" and "the pencil is Mary's." So, also, with "the skin is a calf's"—that is, "the skin is a calf's skin." Other of the instances are scarcely admissible, except among the vulgar, as, "Upon Cæsar's passing the Rubicon," where the *'s* is superfluous. And the *'s* in the nineteenth instance is hardly a possessive augment. It is rather a mere abbreviation of

"as." "I mentioned the high tide at Deptford's being the cause."

After all, why inquire into the matter at all? We do not agree with the London *Athenæum* which asserts that "to all such discussions no one can object, so long as it is understood that ancient learning is not to dictate to our English tongue." We can and do object, because it is a waste of time to enter on the discussion. An English barrister might find something better to do, even though he is in his eighty-third year, has left the law, and has entered upon a literary life—literally, it would seem, by taking the letter *s* for a subject.

The truth is that from the earliest times the genitive case in English was marked by the addition of *es* to the nominative form. Chaucer, if our memory be correct, did not say "man his bliss," but "mannes bliss." In process of time some printer cut out the *e*, and substituted an apostrophe; and the novelty was imitated and grew into universal use. Whether, however, the possessive augment be an abbreviation, or the sign of a true genitive, or the mark which degrades a respectable and substantial noun, into a beggarly and journeyman-like adjective, is a matter of no great moment. It is enough that custom, which makes the language, has rendered the possessive augment a necessary part of English. All we have to do is to bow and obey. If such a thing should be English, is not the question; but, if it is.

Word-critics—those terrible fellows who are always going about the dark places of your sentences with a lantern in their hands, to look for defects—are fond of giving reasons for certain modes of expression. A recent writer in *Notes and Queries*, informs us that the cant phrase—"As sure as eggs is eggs," is not ungrammatical, because,— 'hear him, oh, Phoibos!' it is a misprint or mispronunciation, or mis-something or other, for, "As sure as *X* is *X*," the unhappy writer being algebraical to the last. If this be true, why not say, "as sure as *X* is *X*," and be done with your plural eggs? The late Edgar A. Poe once wrote what he thought was a review upon a two-penny work on English grammar, in which he explained away the subjunctives, denying the existence of such a mood altogether. If "I be" was merely "if I should be," or, "shall be," there being an ellipsis of the "should" or "shall." Of course he would have said "if I am," in certain contingencies. All very nicely explained, to be sure. But he said nothing about another tense. He did not give us the invisible auxiliary in "if I were." We cannot conjecture his explanation on that point, unless he put the ellipses thus—"If I [had been] w[ith you th]ere"—which carries the absurd too far.

Some of the grammarians squabble about the definition of a noun. Lindley Murray's definition of a noun was for a while accepted; but the people said, "can there be a word which shall be the name of any thing that does not have actual or supposed existence." One writer, James Brown, who wrote a volume to prove no one understood the structure of the English language but himself, gave a definition as the best possible, and printed it partly in small capitals to show how very perfect it was: "A noun is an INDEPENDENT name." This had only two faults, namely: it did not define "name," and a noun is not independent. Beside, noun and name are the same thing; and what part of speech would a dependent name be? A noun is a name beyond doubt, and it may consist of one word or two or fifty. "The-never-to-be-too-much-admired-and-constantly-beloved-Miss-Julia-Squiggles dances" consists of a noun and a verb. It is true that the first sixteen syllables do duty as an adjective, but they go

to make up the compound word by which that particular Miss Julia Squiggles is distinguished before all the other Miss Julia Squiggleses, past, present, or to come; and the whole twenty syllables are to all intents and purposes a noun—a name dependent upon certain peculiarities of the party described. On the other hand, the alternate definition is open to objection. "Brains" is a noun, beyond doubt; but the brains of a writer who devotes ninety octavo pages to discussing the possessive augment, in these days of labor-saving contrivances, certainly do not exist, nor can we have any notion of them whatever.

It is very evident how the possessive augment has grown to its present shape. An examination of the leading writers of English, from the earliest time until the present day will show us that. As to why it has assumed the present shape, is a more difficult matter to determine. It is, perhaps not impossible—few things are, except the attempt of a man to raise himself two inches from the ground by tugging at the straps of his boots. But what is to be gained by the inquiry, except a consumption of pens, paper, and ink, and a waste of time?

By way of ending the subject upon which we are in danger of becoming as tedious as Mr. Sergeant Manning himself, and by way of showing our sense of the defect of the English language in forming its genitive by a sibilant, we will repeat a story found in an old English magazine. The English people, having discovered that hissing prevailed in their language, petitioned Satan to give them a better vocabulary. Either because they were old friends, or that he was in an obliging humor, he endeavored to comply with their wishes. He got together a collection of old books, in various languages, mummy rags, and other odds and ends, and boiled them all in a huge caldron. The froth which arose he sent to his English clients, who were well satisfied. It is added, that just as the boiling was nearly over, the Council of Nice broke up, and the books and papers thus rendered useless by being deprived of authority, were sold cheaply to his infernal highness. They were thrown in with the rest, but not having time to be thoroughly boiled, furnished

the hard words that tumble from some people's mouths now and then. The author assures us that "the language would have been an excellent language, if it had not been for the Council of Nice, and the words had been well-boiled." He might,

with equal truth and aptness, perhaps, have added that the hissing sound was not much hurt by the boiling, or that Satan maliciously neutralized the benefits he conferred, by adding to the language the possessive augment.

## PRIMARY INSTRUCTION.

*Requisites for the lessons.* The teacher should be provided with laths or thin strips of wood, varying in length from one inch to one yard. At least six of the shorter measures should be procured, viz.; six laths one inch long, six two inches long, etc., up to twelve inches. These will afford employment for several children at the same time.

*Outline for early lessons.* The different measures from one inch to one foot being placed on a table, several children may be requested to find the shortest measure or lath upon the table. The attention of all being gained, the teacher may tell them that those selected are *one inch* long. All will repeat in concert looking at them carefully—"The laths are one inch long." The measures being thrown upon the table, six children may be directed to find a lath one inch long. Let them arrange themselves in a line facing the school, holding their laths in their hands, and the rest observe and decide whether correct. The teacher may now take a two-inch lath and after gaining the attention of all, may place the one-inch lath upon it twice and allow the class to decide how long it is. All will repeat "The lath is two inches long." Six of the class may be sent to pick up laths two inches long, others *one inch*. All should observe and decide as before. Proceed in the same manner to give the children practice in distinguishing the length of other measures. We usually send seven or eight little ones to the table upon which the laths are lying at the same time to pick up measures of different lengths. After they have selected them they arrange themselves in a line facing the school and each one in succession holds up the measure and says "I

was told to find a lath (for example) six inches long." All observe, as the teacher measures it by the one-inch, and count the number of inches as it is *proved* whether it is right or not. Practice may be given in counting by two's and three's in the measuring process. The question should be frequently asked how many times did the one-inch measure it? How many times did I place the two-inch measure upon this? How much longer is the four-inch lath than the two-inch? etc. The idea of division as well as addition and multiplication may be developed in this manner.

*Drawing Lines.* Children may be allowed to find measures of a specified length and pass to the board to draw lines of the same length. We usually send six to draw lines of the same length and request those in their seats to draw upon slates. Those at the board after drawing are allowed to pass among the desks and measure the lines upon the slates giving each child an opportunity of seeing whether he is right or not. The class may be kept very much interested during these exercises. As many children should be kept busy as possible. "Activity is the law of childhood;" and acting upon this law, they never weary, even when there is a sameness in the lessons.

### *Order of Exercises for Following Lessons.*

1. Review previous lessons; 2. Distinguish 1, 2, and 3 feet; 3. Class draw lines 4, 6, 8, 10, and 12 inches long, and *bisect* them; 4. Class judge of the length of books, slates, pencils, etc.; 5. Draw parallel lines (for example) 6 inches long two inches apart; 6. Draw circles having a specified diameter. 7. Measure off one, two, and three feet of cord or tape; 8. Class make out by actual



measurement and commit to memory the following table.

|           |      |     |       |
|-----------|------|-----|-------|
| 12 inches | make | one | foot. |
| 3 feet    | "    | "   | yard. |
| 5½ yards  | "    | "   | rod.  |
| 16½ feet  | "    | "   | rod.  |

9. Class familiarized with the ordinary measures of capacity, viz., pint, quart, gallon, peck, and bushel measures, and by experiment learn that

|          |      |     |         |
|----------|------|-----|---------|
| 2 pints  | make | one | quart.  |
| 4 quarts | "    | "   | gallon. |
| 8 quarts | "    | "   | peck.   |
| 4 pecks  | "    | "   | bushel. |

Experience has shown that the course as given, affords sufficient matter for a primary school for two years if the class commences not earlier than six years of age. If the children are younger the time should be extended.

## RUDIMENTAL MUSIC;

WITH A NOTICE OF SOME ERRORS IN TEACHING IT.

### II.

THE science of music proposes two principal methods, the analytic and synthetic. In my first article I treated the staff and Piano keyboard in the former, now I intend to treat the same subject in the latter method, to give a sample of both.

A note represents a tone, or, since we have the Piano alone in view, a key. All the notes are of the same shape. We are going to show how the same character can represent all the keys of the Piano. Let us draw a horizontal line, and write below, on, and above it, a note, the letter *O*. We obtain thus three differently situated notes. Now let us call the note below this line *b*, the note on the line *c*, and the note above the line *d*, and we see the principle of the whole arrangement at once. The note on the line represents the long key *c*, in or nearly in the middle of the keyboard; the note below—the long key *b*, next to and at the left of the key *c*; and the note above, the long key next to and at the right of the key *c*; we see from this that the notes *b*, *c*, *d* are exactly situated like their corresponding keys *b*, *c*, *d*; we see also that notes in the first instance represent only long keys.

Let us now draw the second line below this first line, and call it the lower second. We write again a note below, on, and above it. It will be seen at once, that the note above this line occupies the same place with the note below the first line, hence it represents the same key *b*; but the note

on this second line is a new note representing the key *a*, at the left of and next to *b*; this note begins our musical alphabet, although it has long ago ceased to be a starting point; the tone *c* with its note and key having assumed this prerogative.

By drawing the upper second line (above the first), we obtain again three notes, although all of them do not occupy new positions, the note below being identical with the note above the first line, hence representing the same key *d*; but the note on this second line represents the key *e*, at the right of and next to *d*, and the note above—the key *f*—next to *e* at the right.

If we draw one more (the third upper) line, we can finish our musical alphabet, since it consists of only seven letters. By writing a note below, on, and above this third upper line, we obtain again two new notes (one of them being identical with the note above the second line), viz.: *g* and *a*, representing the keys *g* and *a* lying next to each other, and at the right of *f*. This *a* is said to be an eighth (or an octave) higher than the first *a*, the reason of which I need not explain. These two *a*'s are easily discerned one from the other by the great distance of their position, both on the staff and on the Piano. In the same manner every note and key has its six or seven octaves above or below them; all the eight keys or notes lying between such two notes (an octave apart), together with the

first and last, are also called an octave. Still there are standard octaves which we shall learn to name at the proper time. The teacher can now easily proceed with the representation of all the keys by notes, drawing one line after the other in the manner above indicated. When through, he may tell his scholar that the first or middle octave is situated between the middle *c* and the next higher or second *c*, the second upper octave between the second and third upper *c*; the second lower octave between the first and second lower *c*, &c. The naming of the octaves occurs very seldom, hence not much time ought to be spent on this subject. All this can easily be taught in one lesson. The exercises in reading and writing belong to the second lesson.

#### RHYTHMIC AFFIXES.



A piece of music is rhythmically divided like a piece of poetry, into stanzas, called Parts in musical parlance. Parts are subdivided into Measures (poetically, feet). Measures again are subdivided into beats (poetically, syllables), and the simple elements of music are called Tones (in language, sounds) (audible), represented by Notes (visible), and by Keys (tangible). The reason why I speak so definitely in regard to Tones, Notes, and Keys, is because Instruction-books, and perhaps teachers too, use these terms promiscuously, and also because I wish to prove that instrumental music cannot be as difficult as many believe. It is a maxim in instruction and education that the greater the number of senses which are occupied, the easier and surer the scholar will comprehend and learn. Here are three senses constantly and severely taxed; why should it not be easy? why should the scholar not comprehend?

A Beat\* is a space of time, the beginning and the end of which are indicated by two


strokes of the metronome, or of the foot, or of the hand, or by counting twice. We know that a line has two points, that the town-clock has to strike twice to indicate an hour completed, that it must be twice noon or twice midnight to complete one day. So likewise a beat has two points, a beginning and an end; hence two beats have three points, and three beats four points. We count *one* to indicate the beginning of a beat, and *two* to finish the first beat, and at the same time to begin the second, etc.



The number of beats in each measure varies in different pieces of music. The end of a measure is indicated by a *bar* (|), a perpendicular across the staff, and the end of a part or of the whole piece of music by a double bar (||), two parallel perpendiculars across the staff.

A carpenter has to apply the footrule, and a dry good merchant the yardstick, to ascertain accurately the length of the timber or of the dry goods; so likewise has the reader of a piece of music constantly and accurately to measure the length of each tone. The questions when to begin, i. e., to strike a key, how long to keep the finger on it, and when to withdraw the finger, is recurring with every new note, and it requires long and careful practice to be able to read a piece of music at sight.

For this purpose and because keys have to be struck with various degrees of velocity, we have affixes. The only note having no affix is the whole note (○). The half note has a short perpendicular (stem) either at the right side up, or at the left side downward. The origin of this perpendicular is obvious. Imagine the whole note divided  by a perpendicular through its centre, we obtain two halves , each being provided with the perpendicular dividing line (the stem). These two kinds of notes are the remnants of an old musical notation now extinct, consisting of the Maxima, the Longa, the Breve (occasionally still met with), the Semibreve (our present whole note), and the Minim (our present half note), the last of the series according to its name. The quarter note is of a later date, and is the model for the formation of the remaining kinds. It

\* The term Beat is an unfortunate one on account of its synonym "Stroke." "Time" has been proposed instead of it by some authors, but it being so frequently used in a general sense, especially in this instance, I consider it more unfortunate. Still I am unable to propose a better term.

is formed like the half note, but its head is filled (black). However, instead of dividing the head (or ) as in the first instance, we subdivide now the stem, so that the eighth note has besides the half note affix (the stem) one horizontal across the stem

, the sixteenth, two horizontals, ;

and so down: or, more modernized,

or, as now frequently written, in groups:

It will be seen that here are no limits, yet we very rarely go beyond the hundred and twenty-eighth note; and if we do, rudimental instruction has nothing to do with that.


Their very names, whole, half, quarters, etc., indicate their meaning. The whole note represents a key, upon which the finger is to remain twice as long as on that represented by the half note, and *vice versa*. The quarter note represents a key, on which the finger is to remain twice as long as on that representing the eighth note, and half as long as on that representing the half note, etc. I need not enlarge on this point. Let teachers go cautiously and slowly. The school education of all music scholars is not always as it should be. Some of them could not or would not penetrate into the mysteries of vulgar fractions. Illustrations with an apple or any thing else readily at hand are in such cases indispensable. If scholars comprehend slowly, take one kind of notes at a time, *i. e.*, one kind now, and a week or two after another kind.

When any of the principal or subordinate parts of a measure, *i. e.*, a beat or a fraction of a beat, is subdivided into an uneven number of notes, we have no proper affixes indicating it, but have to supply such a want by improper ones, *viz.*: marking the impropriety by writing within a curve drawn above or below such an uneven number of notes, a figure expressing their number. Such combinations are called Trioles, marked by the figure 3; Quintoles, marked by 5; Sextoles, marked by 6 (two

Trioles); Septoles, marked by 7, etc. I do not like these names, but cannot offer better ones. Their jingle renders them acceptable.

The characters for the different kinds of Rests bear a great resemblance to those of their corresponding kinds of notes. The square placed on any line of the staff seems to be the original form, from which all the other characters are derived. The lower part of this square is the character of the whole rest, and the upper part that of the half rest. If we place a stem at the left of any of these two rests, we form the quarter rest; if at the right—the eighth rest. With the eighth rest begins a perfect resemblance between the rests and their corresponding notes, thus:

The Germans found the resemblance between the eighth and quarter rests too great, and joined to the quarter rest another small horizontal . The combination of larger rests than the whole is simple enough. One small horizontal [diagonal? Ed.] stroke extending from one principal line of the staff down to the next, indicates two measures rest; extend this stroke down to the next principal line, and it indicates four measures rest, etc. The uneven number of measures, when kept silent, is indicated by adding a whole rest.

#### RHYTHMIC SUFFIXES.

It very often occurs that a note is to represent three of the next lower denomination; *ex. gr.*: A whole note to represent three half notes (and this, said of notes, applies equally well to rests.) In this case a whole note is provided with a Dot, virtually also a note, but without a characteristic affix, its duration being determined by calculation. This dot belongs to a denomination of notes next below that of the note which it follows, or in other words: when a whole note has this suffix, the dot is a half note, hence the whole note with its suffix is equal to three halves. Often this suffix occurs double, in which case the second dot following the first is half of the

first dot; hence a whole note with a double dot is equal to  $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} = \frac{3}{2}$ , or seven quarter notes. There are even instances of three dots following a note; these are calculated in the same manner, but they do not belong to the elementary course.

#### RHYTHMIC PREFIXES.

I said above, that the number of beats in each measure varies with the pieces of music. There are pieces having two beats in each measure, in which case  $\frac{2}{4}$  is the rhythmic prefix, written at the beginning of it directly after the chromatic prefixes, of which hereafter; in other pieces, with two beats in each measure, the quarter note has one beat, and  $\frac{2}{4}$  is the rhythmic prefix; in others again  $\frac{3}{4}$  is the prefix indicating that three half notes or their equivalents in other denominations of notes are found in each measure, and that every half note or its equivalents has one beat. Other pieces have the rhythmic prefixes  $\frac{3}{8}$  or  $\frac{3}{16}$ , others  $\frac{4}{8}$ ,  $\frac{4}{16}$ , or  $\frac{4}{32}$ , others  $\frac{5}{8}$  or  $\frac{5}{16}$ , others  $\frac{6}{8}$  or  $\frac{6}{16}$ ; all of which bear the simple names their characters indicate, but no others.

There are found in Instruction-books

learned classifications on this subject, which not only lead to nothing, but they mystify the scholars. They are well enough in books written on the science of music, where they have some object, but not here. When will authors of such books learn what belongs to elementary, and what to scientific instruction?

The rhythmic prefixes  $\text{C}$  and  $\text{C}$  are relics of an old musical notation, consisting of  $\text{C}$ ,  $\text{C}$ ,  $\text{C}$ ,  $\text{C}$ , and  $\text{C}$ . From this it can easily be seen that our Primers have had something to do with it, where we learn that G stands for Goose, and hence  $\text{C}$  happening to have the form of a C, is a C, and stands for "common!" How people enjoying their sound senses can print such stuff in Instruction-books from one year to another, goes beyond comprehension. Moreover who will pretend to say that, *ex. gr.*,  $\frac{1}{2}$  time is more common than  $\frac{3}{4}$  time, when we consider the innumerable Waltzes besides other kind of music in  $\frac{3}{4}$  time too numerous to count? And is common the proper word in opposition to compound? But why such a classification at all?

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#### ARCHÆOLOGY.

THIS department of Natural Science now centres in itself the most attention. The recent period within which it has been brought into notice, together with the importance of some of the questions which it has started, will account for this interest. Our object is to present a few facts relating to the nature, and progress, of this science.

Archæology is one of the sources of unwritten history. Philology is another. From the latter we have histories of nations, attempted from the remains of their languages. The former gives wider, surer, and fuller information, from the remains which we call antiquities. Every thing which shows the impress of man's use or contrivance, belonging to time long past, belongs to Archæology.

Archæology has long been mostly supplemental to, and parallel with, written history, but within the last few years she has taken a step backwards and alone, into unrecorded time. Already we hear her profess to write the history of man before documents and tradition, and to give his home and age. We must be ready to hear, understand, and, possibly, confute what she may say.

Man in every stage of civilization constantly deposits remains of life and industry, and if nothing else certainly his bones, which are by far not the least valuable acquisition to an Archæological cabinet. The Swedish Nilsson, and Steenstrup, and the Danish Thomsen, led the way in the collection and study of these ancient relics, and we believe first gave

this branch of investigation the character and dignity of a separate science.

They claim to have discovered, and have actually divided the pre-historical age of Europe, into three eras, the *Stone Age*, the *Bronze Age*, and the *Iron Age*.

We learn from them that the early inhabitants of northern Europe had not yet discovered the use of the metals, since we find among their remains only implements and arms of stone, or bone, hence the period is called the *Stone Age*.

This age was followed by that of *Bronze*. A copper age is thought to have preceded this in some parts of the world. It is seen in the remains of the "Mound Builders" of North America. In Europe there was no copper age, as bronze was introduced probably from Asia. Somewhere here copper was found, and also tin. By some accident these were melted together, and thus bronze was discovered to civilization. This, as soon as known, supplanted copper, because of the ease with which it was worked and excellent quality. It was soon carried to Europe, where copper was unknown, and thus arose the *Bronze Age*.

Iron tardily made its appearance, and with its introduction civilization began to move with mighty strides. Science, art, and history now sprang into existence. Thus began the *Iron Age*.

We have here a picture of the birth and first growth of civilization. Nor should we despise this youth or rather babyhood of science, for it is yet in its youth if we may judge by its present rapid progress. It was infinitely more difficult to start this mighty machine of contrivance and improvement than to keep up its motion, and increase it with accelerated rapidity. The discovery of the use and method of preparing iron is far more wonderful than all the brilliant results of modern ingenuity taken together. These problems were solved slowly and grasped with tenacity.

We would direct attention to two only of the great sources of Archæological information.

First, the *Kjoekenmoedding* and the *Skomose* of Denmark;

Second, the *Lacustrine habitations* of Switzerland.

#### *The Kjoekenmoedding.*

This is a Danish word, compounded of *kjoeken* (kitchen) and *moedding* (rubbish). They are called by Lyell kitchen-middens. Heaps of marine shells are found on different parts of the coast of Denmark. They were at first taken for natural deposits, and showing a change in the level of the sea. But on examining them more closely, there were found only adults and those of a few species of shells, which would not be the case were they deposited by a natural process. Closer investigation discovered broken bones, pottery, and instruments of stone. Nature was released immediately, and man was arrested as the author of these curious remains, which were soon called by their right name, kitchen-rubbish, and all the learned antiquaries of the North devoted themselves to the study of the old clam-shells and broken fish-bones, the refuse of the dinners of these barbarians. They are indeed interesting as the only remains of a people that has long since passed away.

These kitchen-middens are often of enormous size. They are generally from three to five, and even ten feet thick. The length sometimes reaches one thousand feet, and the width a hundred and fifty feet. Some of them are of a circular form; the huts of the barbarians having been in the centre. They are generally about ten feet above the level of the sea. They are found along the arms of the sea where they are not exposed to the action of the waves; those in more exposed localities having been most probably washed away.

They are found over all the Northern part of Denmark. These conformations are said to exist in other parts of the world, as, for example, in Sweden, and Italy, near Genoa.

There are few remains of any vegetable matter; charcoal and ashes, however, are found in them in great abundance.

*The Fauna.*—The shells mostly belong to four species which we will name in the order of the frequency of their occurrence: the oyster, the cockle, the muscle, and the littorine, all of which are still eaten and are found in the markets of Europe.

The bones of fish exist in great quantities, of which the herring is most abundant,



and the codfish, flounder, and eel, quite common. The presence of these as well as the oyster shows that the old inhabitants must have fished in the open sea, and this in canoes hollowed out by fire.

Some bones of birds have been found.

The quadrupeds which occur oftenest, are the deer, the roebuck, and the wild boar.

The only domestic animal seems to have been the dog, which from suspicious marks of stone knives appears to have been an article of food.

*Man.*—His bones are not found here, as the method of interment practiced here by this people will show.

This also proves that cannibalism did not exist among this primitive people, for, if it did, we would find the bones, and these marked by knives.

We find many products of industry. Fragments of rough pottery are quite usual. Rough and poorly shaped articles of silex are found in great quantities, and the marks upon bones of animals they have been cutting show that they had other and better instruments of the same material, but which they did not throw into their refuse heaps. The only indication of arms exists in the form of sharp angular fragments of stone, intended for projectiles, but whether for war, or simply for hunting, cannot be determined.

The presence of these stone implements, and the absence of any metal, assign these Kjockken-moedding to the stone age.

A few words in relation to the Skoosmose, or peat-bogs of Denmark. There are three kinds of peat-bogs, the Engmose or bog-meadows, the Swampmose or Hoermose, which may be called heather-bogs, occupying extended plains of dry ground, and the Skoomose or forest-bogs, which last are the most ancient, and to which only we will refer. These have done for the vegetable what the kitchen-middens have for the animal history of the stone age of Denmark. These peat-bogs grew in deep hollows. The trees growing on the edge, when they became too large, fell over into the bogs from all sides. When the bog is small, these trees fill it up, but when it is larger, they form simply a woody zone about the edge, and in the

centre the peat is found. There are many facts connected with the trees forming the outer edge, and the character of the various mosses and plants which have assisted in forming the peat-bogs, which we must pass over, from want of time. Suffice to say that here we have the Flora of the stone age.

Numerous archaeological specimens are found in these bogs, which are often very fine, and which belong to all the three eras of stone, bronze, or iron, according to their depth.

Some stone implements have been found beneath the roots of pines, in the woody zone, showing the great antiquity of the primitive population. These bogs attain a depth of thirty feet. The time consumed in their growth, and the general question of chronology, we wish again to refer to.

There are many large sepulchral vaults in Denmark belonging to the age of stone. In these large numbers of skulls are found, very small, and remarkably rounded, very much like that of the modern Laplander. We can thus easily learn the type of the people of the stone age. We are wanting in materials for the age of bronze. The people of this age burned their dead, and therefore no skulls are found, but the presence of the domestic animals indicates the influx of a new population.

With the iron age the people began again to bury their dead, and consequently we have skulls of this period, but no large number have as yet been collected. Those which we have show a great improvement upon the skulls of the stone age. They are quite elongated, and the forehead somewhat retreating, but very much larger than the skulls of the stone age. The age of bronze supplanted the age of stone, through the higher civilization and use of the superior arms of bronze, but we have no measure of their physical development, except by the handles of their swords, which are quite small.

The iron age, with its strong race and effective arms, destroyed the bronze. An illustration of the supplanting of the age of bronze, by the age of iron, has happened very near our own times, in the destruction, by the Spaniards, of the bronze civilization of Mexico.

We would call your attention to the peculiar method of eating of the people of the stone age. Their front-teeth, incisors, did not lap over, but fitted directly upon each other, and from the way in which the summits of the teeth were worn we see that they used these front teeth, not to cut off their food as we do, but to hold and grind. They probably had the same habits of eating as the modern Greenlanders, who seize the meat and tear away partly, and then sever it with a knife, close to the teeth, in the most dexterous manner.

The people of these different eras must have been supplanted each by a stronger race. Tradition, archæology, and philology unite to give us information here. Tradition tells of tidal flows of population westward. Archæology points to the same thing, but tells, in addition, of the physique and civilization of each people; while philology asserts there was a great central race somewhere in the neighborhood of the Caspian Sea, from which radiated the line of the great Indo-European family. The Celts came first of these people, and probably introduced the age of iron into Europe. Closely following them, or perhaps contemporaneous with them, came another branch of the race, before which every other race has had to give way, wherever it has planted its foot—this was the Teutonic family, of which the Germans, the English, and the Hollanders, are members, and we hope the admixture of other blood into our own people will not be enough to destroy the prestige which has always attended the race.

#### *Lacustrine Habitations of Switzerland.*

Even more remarkable, and closely resembling these remains of the North, are the lake habitations of Switzerland. Some years since, piles were discovered in the lakes, where the water is from five to fifteen feet deep. About them were found all kinds of antiquities. These places were soon recognized as sites of pre-historical villages, built on piles.

There are habitations of the pure age of stone, as at the little Lake of Moosedorf, about two leagues from Berne. Here were found a large number of articles of stone, wood, horn, and bone. These implements

resemble closely those of the same period, found in the North, and we find the same habit prevalent of splitting the bones for the marrow. There are found hatchets, chisels, also various tools of bone, etc.

There are also habitations belonging entirely to the age of bronze. From one alone five hundred hair-pins have been rescued from the bottom of the lake, and bracelets are common. The instruments of this age, as of stone, resemble the productions of the North of the corresponding age.

Lastly, there have been found remains of this kind of the age of iron, the fewness of which show that shortly after the introduction of iron, these Lacustrine habitations ceased.

Nothing could be better adapted to the preservation of antiquities than these pile villages. All the refuse, or articles which were lost, sank immediately to the bottom of the lake, and were covered by the mud, or when some village was burned, all its non-combustible property was swallowed up by the waves, for the pleasure of the future archæologist.

You may ask why these nations, at such great labor, built themselves dwellings in such inconvenient places. The best solution seems to be that, as they knew not how to build walls of brick and stone, they made themselves walls of water. The country was then divided into many small tribes, on terms of no great intimacy. They could only build huts of straw or wood, which were easily burnt by their enemies. On the contrary, these water castles connected with the shore by means only of a long, narrow causeway, which, being readily taken up, made the village impregnable. The cause of their disuse, about the beginning of the iron age, was probably this, that some stronger people, of better social organization, united all the people of Helvetia together, and thus they were no longer necessary.

*Chronology.*—The stone age is thought to have existed 4,000 years ago, and, from the quantity and nature of the remains, to have lasted a long while, but there is as yet nothing definite about it.

We have thus given the briefest and most imperfect sketch of archæology, the

divisions of the subject, and the progress of investigation in Switzerland and Denmark. We have omitted all mention of the antiquities of our own continent, which are so extensive, and doubly interesting to us.

The results of this science are already important and varied, they throw light upon the early pre-historical times, upon the character and habits of the inhabitants, the animals, and vegetables of that period.

From the subject of chronology important questions have been started, and strong attempts have been made to prove the great antiquity of man. In fact it may be said that this is the great attacking point of the infidel, at the present, and also the point in which that class of scientific men who are careless whether their results may lead them, are likely to arrive at conclusions disastrous to the truth. To be brief, they assert that remains of man are found so situated that he must have lived much more than 6,000 years ago. Nay, in some cases, they claim an antiquity of one hundred centuries.

We will give a few of the grounds for the assertion of the high antiquity of man.

1st. Lyell in his work on the antiquity of man calls to the stand the antiquities found in the post-pliocene gravel beds of St. Acheul and Moulin Mignon, but their mass or arrangements do not give the answers which he wishes. Such gravel heaps may show the force of water, but not the time of accumulation, and beside this, other things might have complicated the question.

The *bone caverns* have been a celebrated argument on which these men hang their statements for the high antiquity of man. The caverns have been the habitations of wild animals and men. But here the bones and flints have been displaced by water, so that the relative time of deposition is very uncertain. These caverns seem during all time to have been the homes of men, especially during the stone age, all which very much confuses the proposition of the advocates of man's high antiquity.

Another position is the peat bogs, which they claim to have taken great periods for their formation, but good observers ac-

knowledge that they may have grown in 4,000 years, although they say they may have taken 12,000 or more, but the uncertainty of their own testimony, and the known imperfection of their data, will throw them out of court on a question of any importance whatever.

The following fact is often triumphantly alleged. A whitened flint has been found which has been recut since it was whitened. They said that it required an immense time to whiten, but Mr. Stenstrup has found many pieces of silex which he knows to have been whitened in a comparatively short time. This, of course, finishes this cavil.

The growth of deltas of rivers are adduced; as, for example, the computation of the great antiquity of the Delta of the Mississippi: the fallacy and great uncertainty of which calculation was so well shown by Prof. Geo. H. Cook, at the annual meeting of the Natural History Society of Rutgers College, in 1863.

We have thus given a few of the points which the Lyell school and other classes of advocates for the high antiquity of man adduce as examples, to show the nature and quarter of the attack.

It is incumbent on every lover of truth and science to be ready intelligently to meet all these questions. They are afloat in the world. They will be believed by some, and will be by more, unless we are as earnest in refuting them, as they are in urging them. They must be met on their own ground, on the question of fact, for with this only will the world be satisfied.

[The preceding article is an able and clear summary of archaeological progress, and will interest our readers. While we give it this just praise, we must dissent from its distinguished author in his assault upon Lyell, which we think unnecessary, and not entirely in consonance with the spirit of philosophy. The first and the last point of inquiry, in these investigations, is truth. If results arrived at be true, they cannot militate against revelation—otherwise revelation itself could not be true—and to that latter absurdity our learned contributor has, we believe, no desire to lead us.—ED. AM. ED. MONTHLY.]

## ARSENIC-EATING AND ITS EFFECTS.\*

THE metal arsenic is the most widely known of all the mineral poisons. It does not occur native but invariably alloyed with other metals. When isolated, it appears in scales which are excessively brittle, and, upon exposure to the air, change their color from grayish to a dingy brownish tint. The fusing point has never been ascertained, since at a very low temperature the metal sublimes, uniting with the oxygen of the air, and condenses as a white substance, which constitutes the arsenic of the shops, and is technically known as arsenious acid. As met with in commerce, it is a fine white powder which, when viewed under the microscope, appears to be made up of little octahedral crystals of surpassing beauty. Used as a medicine, the effects of this substance are so powerful, and its administration is attended with so many difficulties that except in one class of diseases, it is seldom given by physicians, and never by those kind domestic practitioners, whose repeated doses of salts and senna render our infancy a subject of horror in old age. Since, however, the substance is now so familiar and coming so rapidly into use as a cosmetic, a most injurious form, a few facts concerning its effects may not be unacceptable.

For many years there has been a certain indefinite acquaintance with the fact that, among the peasants of Styria and Hungary, the habit of arsenic-eating prevails; but many of the accounts were evidently much exaggerated. We heard frequently that the inhabitants of those districts were accustomed to spread arsenic thickly over their bread and eat it with great relish, without experiencing any evil effects; which, being simply impossible, cast a shadow of doubt over the whole matter and led scientific men to regard all accounts as fabulous. Nevertheless, at all times some credence was granted, for in 1822 one of the Holland medical journals

stated, that arsenic was to be found in almost every house in Upper Styria, where it was used as a medicine for animals, for killing vermin, and as a seasoning for cheese. A similar statement occurs in the Penny Cyclopaedia. The first detailed account, however, was given in 1841, by Dr. Von Tschudi, from whose letters, which have been very widely circulated, the most of our own knowledge has been obtained. He states that, in Upper Styria, especially in the mining regions, arsenic-eating prevails among the lower classes. During the smelting of lead and other ores in that region the arsenic sublimes and condenses in the long chimneys, whence it is collected and sold by pedlars among the people. It is there known as "Hidri," which, according to Dr. Johnston, is a corruption of "Hutter-ranch," signifying "smelt-house smoke."

Mr. Heisch, F. C. S., has been at pains to ascertain the facts of the case and published the results of his inquiries in the Chemical News. He was put into direct communication with an arsenic-eater, who informed him that the habit does indeed prevail to a very great extent, and gave the following particulars. The arsenic is taken, fasting, in some warm liquid, generally coffee; the dose is at first about the size of a pin's head and is gradually increased until it reaches that of a pea. Slight symptoms of poisoning follow the first dose but soon disappear. Once begun the practice can only be left off by gradual diminution of the doses, since a sudden cessation is always followed by severe symptoms of poisoning, which can be speedily allayed only by resuming the use. Those given to this habit are generally long-lived and preserve a youthful appearance; but, unless they free themselves before old age, invariably die very suddenly. In arsenic-works only such as daily use the acid can withstand the fumes, which soon prove fatal to others. The gentleman from whom Mr. Heisch obtained his information

\* 1. Influence of Arsenic upon Waste of Animal Tissues. *Silliman's Journal*, vol. xxx.

2. On the Arsenic Eaters of Styria. *Chemical News*, May 19, 1860.

† Dr. Von Tschudi says that the symptoms are slight.

was director of an arsenic-works. When seventeen years old, while studying assaying, in which he had much to do with arsenic, he was advised by Professor Böusch, his instructor, to learn this habit, since, if he desired to become director of such an establishment, he must abstain from spirituous liquors and learn to use arsenic. At the same time he was strongly advised that, after the age of fifty years he must gradually diminish the dose until it became less than that with which he had begun. He had strictly followed out his preceptor's advice until the time of communicating with Mr. Heisch, when he was forty-five years old. The especial peculiarity about this case was, that his first dose was three grains, a quantity usually considered poisonous. In 1859, his dose was twenty-three grains per diem, taken in the form of coarse powder.

Arsenic-eaters, generally, preserve so great secrecy concerning their practice that, although Dr. Arbele inquired of many leading physicians in Styria, yet he could learn of but three or four cases, while, at the same time, all felt thoroughly convinced that the habit prevailed to a very considerable extent. One of these was that just referred to; another was that of a ranger in Grossarl, who, at the age of eighty-one, was still a keen chamois-hunter and an active climber of the mountains. He met his death by a fall in the mountain while engaged in his occupation. He always appeared healthy, and every day took a dose of arsenic, which, in case he had used too much liquor, enabled him to rise bright and sober on the next morning. Another, a gentleman in Strasburg, who began from curiosity, takes twelve and sometimes fifteen grains of arsenic daily.

The physiological effects of this poison are most curious. If, as we stated, one contract the habit and suddenly break it off, symptoms of poisoning occur; itching over the body, soreness of the gums, cough, and pain in the abdomen. The director of the arsenic works and the gentleman in Strasburg each attempted, on several occasions, at the urgent request of their friends, to cease the practice; but the inconvenience was so excessive, that the use was immediately resumed. This agent also

beautifies the complexion and increases plumpness of form. Dr. Von Tschudi narrates in this connection a sadly interesting case, which occurred in his own practice.\* A young milkmaid of thin and unprepossessing features, in order to gain the affections of a young man in her village, began the use of arsenic, taking it two or three times a week. In a short time her complexion brightened and her features were filled out, so that she accomplished her object. Unfortunately, her vanity became excessive, and, in order to increase her beauty still farther, she increased her dose too greatly and died a terrible death. Professor E. Kopp stated in Vol. xlii. of *Comptes Rendus* that, during his great calico-printing operations, in which arsenic was very extensively used, the weight of his body increased twenty pounds in the course of two months, during which he absorbed the mineral through his hands, which were frequently in contact with arsenical solutions. In nine or ten weeks after the exposure ceased his weight returned to its normal condition. The same effects are produced upon horses and other animals. All professional jockeys are practically aware that small doses of arsenic give horses plumpness and glossy coats. In Vienna this habit is universal. The groom generally throws a pinch of the acid among the oats or, just before taking the horses out, ties a piece as large as a pea in a small bag attached to the bit, by which means, also, is produced a fine foaming at the mouth. It also has the power of strengthening the wind, for which purpose it is used by hunters, and is given to horses which are compelled to draw heavy burdens over the mountains. It also seems to protect against fevers and infectious diseases. In these latter respects its action resembles that of narcotics, yet no depression appears to follow the exhilaration.

These effects were difficult of explanation, and doubtless fostered the incredulity with which scientific men received statements concerning them. However, the late experiments of Drs. Schmidt and Steurzwage, of Dorpat, have in great measure elucidated the subject, and proved the

\* Chemistry of Common Life. Dr. Johnston.



published accounts reliable. When introduced into the circulation, arsenic causes a diminution of from 20 to 40 per cent. in the waste of the tissues, even after the administration of very small doses. The effect follows more rapidly if the acid be injected into the veins, more slowly if absorbed by the intestines. Larger doses, however, produce spinal irritation and even paralysis. The effects then are to be referred to congestion of the central organs consequent upon the repression of a large amount of carbonic acid and urea.

On account of its peculiar and rapid action, arsenic has ever been a favorite ingredient in quack medicines. It has been used as an antidote of bites of venomous serpents, in fevers, and to extirpate cancers; but now is little used except in diseases of the skin. It is a remedy, however, which cannot successfully be "pushed," if we may use the technical phrase, since it is cumulative, and ill effects may appear at a time when least expected. In its administration constitutional peculiarities must be carefully considered. According to Dr. Henry Hunt, it operates very beneficially

upon persons of loose fibre, with languid circulation and profuse secretions; but it is excessively injurious in cases of morbid irritation of the spine or local nervous injury. Erichson holds that it is very injurious to persons of plethoric habit or sanguineo-nervous temperament, since the metal possesses highly stimulating powers. To the arsenic present in many mineral waters is ascribed their healing power in skin diseases.

As arsenious acid is now so easily obtained, and as fearful mistakes are apt to occur from its resemblance to common salt or pulverized sugar, the antidote should always be at hand. This is the hydrated peroxyd of iron, which may be procured by adding aqua ammonia or liquor potassa to the muriated tincture of iron, and preserving the reddish brown powder which falls to the bottom. This should always be kept under water in a close-stoppered bottle, as, if dry, its properties are not as certain. To an adult a table-spoonful, and to a child a dessert-spoonful, should be given every five minutes in plenty of water until urgent symptoms disappear.

## HOW TO TEACH READING.

### FIRST METHOD.

**L**EARN the names of the letters, the "a-b-ab's," little words, and big words,—pronouncing all the syllables,—and then read. The child thus taught, in the course of many years learns many words,—few of which, however, convey any idea to the mind. Each letter, each syllable, each word is a new fact to be learned and remembered by a single act of memory. Children thus taught regard fluency of utterance as the climax of good reading. And the result of the process is that they can name words arranged horizontally, as in reading-books, as glibly as when arranged perpendicularly, as in spelling-books. The writer was thus taught, and he distinctly remembers being called upon to exhibit his unusual powers of reading long before he dreamed that reading is any thing save calling over words as

written. And he remembers just as distinctly that it was full two years after he could "read in the Testament" that he learned to his joyful surprise that there are "stories in books." The date is fixed by an old copy of the Farmers' Almanac, in which the first "story" was read. All before that had been literally only "words, words, words." And at least one precisely similar instance,—that of the daughter of a retired schoolmaster sixty years of age, who taught his own children,—has come under the writer's observation. Now it is probable that the fathers who practiced this method *knew* that this would be its effect,—but they could conceive no better. They believed that, necessarily, the "roots of learning are bitter,"—and that the knowledge which would ultimately thus break in upon the mind would more than compensate for the bitterness then past.

## SECOND METHOD.

First learn things. Then describe those things orally. When some facility in this is acquired let an outline drawing of some object be made. Let the objects be such as are easily represented, and let the pupil copy the drawing. Take, for example, a hat. Talk with the class about it, its shape, its size, its use, its parts, etc. Present a drawing in outline, and have them copy it. Correct errors, and gently teach them to draw it properly. Next introduce the printed name, "hat." Let the children repeat the word individually and in concert, until familiar with it. Have cards on which the word is printed in connection with others,—and have them search it out, until they recognize the word as readily as the picture. Cultivate their power of observation and description by requiring each one to tell you on the morrow something about the hat worn by some member of his family. Hasten slowly. Take up other words in the same manner, *e. g.*, cat, rat, mat, bat, etc., etc., etc. It will not be long before some bright child will discover (and, if properly taught, will suddenly announce the discovery), that some one at least of these words consists of three parts. Applaud him for the discovery, and pronouncing the word slowly, show him that the spoken word also consists of three parts, *e. g.*, m-a-t, giving each sound separately. Now drill the class on each of these sounds, as before on the whole word, and let them make the letter representing the sound, until able both to make it and distinguish it, as well as to utter the sound, readily. The sound is as yet to them the name of the letter. When these words and letters are thoroughly learned, and can be readily written,\* take up others, *e. g.*, man, ran, can, pan, etc., etc., etc., in the same way. Be sure that words which do not admit of representation by drawing, be understood by using them in sentences, and by requiring the child to form sentences in which they occur. As fast as words are learned they should be arranged in columns at the top of the blackboard, and there should be a frequent drill upon them,

the pupils uttering them as rapidly as the teacher points at them in every variety of order and disorder. After a few words are thus learned they may stand in some such order as this:

|     |      |      |     |     |       |
|-----|------|------|-----|-----|-------|
| a   | rat  | is   | on  | the | floor |
| now | he   | is   | in  | my  | hat   |
| hit | him  | with | the | old | bat   |
| let | the  | old  | cat | get | him   |
| the | cat  | has  | bit | the | rat   |
| now | the  | cat  | has | the | rat   |
| she | eats | him  | on  | the | mat.  |

It will be understood that this is a new order of arrangement, and the drill will proceed as heretofore, the teacher pointing to a word, now here and now there, and the pupils responding as usual. When the interest is at its height, let the teacher point to the words in the order in which they are arranged horizontally. Urge the children to repeat them more rapidly. Pass the pointer along the line, and presently one of the bright-eyed ones almost dances as he looks up to the teacher and exclaims, "A rat is on the floor,—o-o-oh!" Be patient now with the dull ones; explain the matter, and when all "see it" pass on to the next sentence, and so through the lesson. It will be well now to have a book in which the same lesson occurs, and to put the book into their hands for a few minutes, that they may read it there. Let them copy it now on their slates as a reading lesson. Proceed with this process to other words and other lessons, being careful all the while to talk with the pupils on all the subjects mentioned. The result will be that children will learn facts as well as words. They will learn to attach ideas to words, and not to read without thought. So doing, they will read naturally, intelligibly,—and will have acquired a practical knowledge of the arts of composition, conversation, and grammar, long before they would otherwise have even learned to read—and that without thought. *Haud ineptus loquor*, that is, "I've tried it."

There are many combinations of these two methods, but their excellence is in proportion to the degree in which they approach the last. Nor is this method so difficult that it needs special "Normal" training to acquire it. Any earnest, diligent, persevering teacher can do it.

\* Children should print letters. It is not difficult.

## DRAWING IN EARNEST.

SOME one has said, that any one who can be taught to write can also be taught to draw; and the assertion is correct. To become a great artist an individual must possess genius and the power of patient labor; to make a good draughtsman genius is not required. The fact that so many persons attempt to learn drawing, and fail, proves one of two things—either that they lack patience, or are badly taught.

Bad teaching is less the fault of the teacher than of the pupil or his friends. The latter party are anxious to see something of the pupil's creation. Hence, before he can draw a straight line by a free motion of the hand, and long before he can execute two parallel lines, or a single curved one, with ease, he is set to copying the work of another hand. As to waiting for a knowledge of linear perspective, that would be considered an absurdity. After a year's tuition, a shaded copy of some lithograph sketch is sent home, duly framed and properly admired by the parents and visitors, and "John can draw, sir."

On this same principle, embodying a lack of principles, are drawing-books made. The pupil is put through in a hurry. He does not climb, but jumps. Fearful to the view, and accompanied by many tumbles and unpleasant sprawling, is this same jumping. Houses that emulate the leaning tower of Pisa; men who defy the law of gravitation by standing at an angle of forty-five degrees; animals whose anatomy is abnormal from hoof to horn; and a collection of objects that form an absurd and grotesque jumble, are the result.

In the series of drawing-books issued by Bartholomew,\* we see an attempt made to improve upon the prevailing mode. The lines to be copied are placed on a separate slip next to the pages of blank paper, and the pupil is expected to repeat these until he gains a reasonable amount of facility.

In another shape these are repeated, with gradual and careful additions, each reproducing the elementary study of lines, in a manner not calculated to weary the learner. The gradation employed is a good one. In practice, however, we should use up a dozen copies of number one of the series before we went to number two; eight of number two before we went to number three; six of number three before we went to number four; and so on to the end. At the close we would give a course of lessons on linear perspective, and, having seen that it was thoroughly understood, would set the pupil at still-life objects of the simplest character; and then return to the drawing-books and go straight through again. With this knowledge, elementary instruction in anatomy might be given, and then the pupil might go to studies from nature, animate or inanimate. Unless the pupil were incurably stupid, he could reproduce on paper what he saw, and even reproduce what he thought. To embody his conceptions on paper or canvas, in a striking and original manner, would require something more, but that can not be taught at all.

As a text-book of linear perspective, we might well use Bartholomew's new work on the subject.† As an elementary work, it is more complete than any we have seen of late; and, in the small space of sixty-four pages, almost exhausts the subject upon which it treats. The first principles are fully explained; the preliminary definitions made clear and distinct; and the explanation of each principle exhausted in succession before the succeeding principle is brought in review. The author has given us practical problems solely, and, in connection with the method by which the pupil must determine perspectives by means of vanishing points, the method of sketching objects is explained in a plain and brief way. There are reasons given for the lines drawn, and these are plain

\* Bartholomew's Drawing Books. Six numbers. New York: Schermerhorn, Bancroft & Co. Oblong 8vo, pp. 144. *Twenty-two plates.*

† Linear Perspective Explained. By Wm. N. Bartholomew. Boston: Shepard, Clark & Brown. Imp. 8vo, pp. 64.

enough. So far, so good. The chapter upon the centre of view might have been enlarged with advantage. It is here where a deal of fundamental error prevails, simple as the point may appear; and we have seen pictures from artists of pretensions, where, at a single glance, the objects represented could never have fallen within the line of vision. If acknowledged artists fall into errors of this kind, the more necessity lies for guarding the pupil against it, in a course of elementary instruction.

It must not be understood, however, that we object to the copying of good drawings, nor that we do not think it, if properly controlled and directed, a valuable auxiliary. By way of relieving tedium, a little practice in that line, after curved lines have been somewhat mastered, may be not only tolerated but encouraged. Great care should be taken that these specimens are as simple as possible. For that purpose, the little packet of drawing-cards, known as "The Young Artist,"\* seem admirably adapted. They are well drawn, and properly progressive in their character. For very young pupils they would form an interesting variation to the drawing of straight lines, in which young pupils can not well persist, without fatigue, and sometimes disgust.

What we insist on, and particularly where drawing is, as it should be, a part of school instruction, is the furnishing of thorough elementary lessons, and a complete knowledge of each element before it is attempted to master the next. This holds good of instruction in everything else—why not here? More than even the "pot-hooks and hangers" to the pupil in penmanship are straight and curved lines to the pupil in drawing. No amount of diligence can qualify, if these be not previously well practiced. Without constant and thorough practice in manual movements on the finger-board, the performer on the pianoforte can not obtain that manual dexterity so requisite to render music. Nor can he preserve facility of

execution, and brilliancy of fingering, without continued practicing with the scales. The greatest masters of art repeat elementary lessons at times. The repetition of executing straight and curved parallel lines is valuable, even after great force and power has been attained. Malibran, or some other singer, on being spoken to about some brilliant and rising rival, quietly asked, "Can she sing three plain notes?" When we are told of the powers of an artist, we are disposed to ask, "Can he draw three perfectly parallel lines with three quick movements?" If the reply be in the affirmative we are satisfied.

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## AMERICAN EDUCATIONAL MONTHLY.

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NOVEMBER, 1864.

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### LYELL AND HIS VIEWS.

SIR Charles Lyell, on taking the chair as President of the British Association, recently, delivered an inaugural address, which was an admirable review of the state of science at the present day. As an able contributor of ours has some strictures upon the great geologist in our present number, we give an extract from this inaugural address. It may serve to show, partly, the views of Mr. Lyell upon the subject of the age of animate creation:

"MM. de Verneuil and Louis Lartet have recently found, near Madrid, fossil teeth of the African elephant, in old valley-drift, containing flint implements of the same antique type as those of Amiens and Abbeville. Proof of the same elephant having inhabited Sicily in the Postpliocene, and probably within the Human period, had previously been brought to light by Baron Anea, during his exploration of the bone-caves of Palermo. We have now, therefore, evidence of man having co-existed in Europe with three species of elephant, two of them extinct (namely, the mammoth and the *Elephas antiquus*), and

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\* The Young Artist. Drawing Cards for the Use of Schools. Drawn by Darco. New York: Schermerhorn, Bancroft & Co. 20 cards in packet.

a third the same as that which still survives in Africa. As to the first of these—the mammoth—I am aware that some writers contend that it could not have died out many tens of thousands of years before our time, because its flesh has been found preserved in ice, in Siberia, in so fresh a state as to serve as food for dogs, bears, and wolves; but this argument seems to me fallacious. Middendorf, in 1843, after digging through some thickness of frozen soil in Siberia, came down upon an icy mass, in which the carcass of a mammoth was imbedded, so perfect that, among other parts, the pupil of its eye was taken out, and is now preserved in the Museum of Moscow. No one will deny that this elephant had lain for several thousand years in its icy envelope; and, if it had been left undisturbed, and the cold had gone on increasing, for myriads of centuries, we might reasonably expect that the frozen flesh might continue undecayed until a second glacial period had passed away.

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“I will now briefly allude, in conclusion, to two points on which a gradual change of opinion has been taking place among geologists of late years. First, as to whether there has been a continuous succession of events in the organic and inorganic worlds, uninterrupted by violent and general catastrophes; and, secondly, whether clear evidence can be obtained of a period antecedent to the creation of organic beings on the earth. I am old enough to remember when geologists dogmatized on both these questions in a manner very different from that in which they would venture now to indulge. I believe that by far the greater number now incline to opposite views from those which were once most commonly entertained. On the first point it is worthy of remark that, although a belief in sudden and general convulsions has been losing ground, as also the doctrine of abrupt transitions from one set of species of animals and plants to another of a very different type, yet the whole series of the records which have been handed down to us are now more than ever regarded as fragmentary. They ought to be looked upon as more perfect, because numerous gaps have been filled up, and, in the forma-

tions newly intercalated in the series, we have found many missing links and various intermediate gradations between the nearest allied forms previously known in the animal and vegetable worlds. Yet the whole body of monuments which we are endeavoring to decipher appears more defective than before. For my own part, I agree with Mr. Darwin in considering them as a mere fraction of those which have once existed, while no approach to a perfect series was ever formed originally, it having never been part of the plan of Nature to leave a complete record of all her works and operations for the enlightenment of rational beings who might study them in after-ages.

“In reference to the other great question, or the earliest date of vital phenomena on this planet, the late discoveries in Canada have at least demonstrated that certain theories founded in Europe on mere negative evidence were altogether delusive. In the course of a geological survey, carried on under the able direction of Sir William E. Logan, it has been shown that, northward of the river St. Lawrence, there is a vast series of stratified and crystalline rocks of gneiss, mica-schist, quartzite, and limestone, about 40,000 feet in thickness, which have been called Laurentian. They are more ancient than the oldest fossiliferous strata of Europe, or those to which the term primordial had been rashly assigned. In the first place, the newest part of this great crystalline series is unconformable to the ancient fossiliferous or so-called primordial rocks which overlie it; so that it must have undergone disturbing movements before the latter or primordial set were formed. Then, again, the other half of the Laurentian series is unconformable to the newer portion of the same. It is in this lowest and most ancient system of crystalline strata that a limestone about a thousand feet thick has been observed, containing organic remains. These fossils have been examined by Dr. Dawson of Montreal, and he has detected in them, by aid of the microscope, the distinct structure of a large species of Rhizopod. Fine specimens of this fossil, called *Eozoon Canadense*, have been brought to Bath by Sir William Logan, to be exhibited to the



members of the Association. We have every reason to suppose that the rocks in which these animal-remains are included are of as old a date as any of the formations named azoic in Europe, if not older, so that they preceded in date rocks once supposed to have been formed before any organic beings had been created."

#### WORD CRITICISM.

WE receive communications, from time to time, commenting upon various papers which appear in the MONTHLY. Some of these strictures we profit by. Now and then, a correspondent indulges in criticism which is scarcely worthy of notice, except for the benefit or amusement that notice may afford to others. Some of these letters are impertinent in their tone. These we generally consign to the paper-mill, by way of the waste-paper basket. We make an exception this month in favor of two.

The first is by a gentleman who prefers to hide himself under the name of "Verbum Sat," which may mean Jones or Jenkins or Jack Robinson. This anonymous writer, whose pot-hooks and hangers are gracefully curved, assails us for having too tartly noticed in our last number a fault-finding correspondent, and informs us that our conduct is not "brotherly," nor "gentlemanly," nor "likely to increase the circulation of the MONTHLY." All of this may possibly be true. He then cites Smart and Worcester to prove not that "firstly" is not used as an adverb, but that it should not be so used, and evidently thinks he has utterly annihilated us, in which happy frame of mind we are willing he should remain.

The other correspondent, who also writes with a painfully neat penmanship, has the manliness to sign his own proper name. After sustaining "Verbum Sat" on the "firstly" question, with a rather more impertinent tone than the other, he introduces a fresh charge, as follows:—

"In the number for this month, on pages 310 and 316, your prejudice for adverbs is

remarkably illustrated in the use of 'fastly' for fast, and 'illy' for 'ill.'"

This last correspondent must belong to that class of readers who suppose that everything in a journal, down to the advertisements, is written by the editor. We can tell him that the articles are written by many hands, and that we are not in the habit of correcting the peculiarities of style of our contributors. Should the blunders be gross, their presence may lead to the rejection of the article in which they exist; but we take no liberty with the author's syntax or etymology, nor even with his orthography. In the case of "fastly," however, our correspondent is wrong, and our contributor right. The writer says, speaking of Jack Summers, that "the boys and girls got on so fastly under his directions." Our contributor uses "fastly" in its proper sense; but our correspondent is under the impression that it is employed to convey the idea of quickness. Now had our contributor wished to give the notion of quickness as well as firmness, he would have said, possibly—"the boys and girls got on so fast and fastly." In regard to "illy," we do not see it on the page mentioned. It must be on some other. It is permissible, however; is admitted, under protest, by the lexicographers; and is used occasionally by standard writers.

We may prepare a paper on this question of adverbs some of these days, and, if we do, will endeavor to exhaust the subject. In the meanwhile, there are some things to be commended to the attention of our attentive correspondents. There are certain analogies which lead writers into using words in certain forms; and, however lexicographers may protest, or small grammarians growl, this will be done to the end of time. The protest of the lexicographers goes for naught, being in excess of their duty. The compiler of a dictionary gives the approved mode of spelling and pronunciation of words, with the meaning attached to each by standard writers. He gives the language as it is, not as it should be. And the spelling, pronunciation, and

meaning continually change. What is used in one age is obsolete in the next; while there are words in common use now which were in no dictionary prior to the present century. Not only do the spelling and form of words change in time, but the parts of speech exchange functions. The adverb of to-day may be the adjective of to-morrow, and verbs and nouns may shift places. It may also be observed that verbal criticism is by no means an evidence of enlarged mind on the part of the critic. Sometimes the supposed blunder is an error in proof-reading, and sometimes, as in the case of "fastly," is a blunder of the critic. We would be glad, at any time, if readers, who discover any error of fact, false doctrine, or anything wrong in the tone or temper of the MONTHLY, should point it out. If the communication be courteously worded, it will receive due attention. Our desire is to make a serviceable magazine; and, if our correspondents be really friendly, they will aid us in our labor, and not waste their time, and weary our patience, by picking real or supposed verbal faults in the articles written by our contributors. If, however, they prefer to engage in such business let them do it with a show of courtesy. Above all, let them not write ill-natured communications to us, because we felt it our duty on a time to rap one of their fellow-sinners slightly over the knuckles.

#### STRANGE.

A VERY amusing blunder is to be found in the last number of *Macmillan's Magazine*, an English publication. Max Müller, so well and favorably known as a linguist and philologist, has an article upon the language and character of the people of Schleswig-Holstein. In this he says, "Instead of saying the sun has set, the Holsteiners, fond as they are of their beer, particularly in the evening, after a hard day's work, say, 'de Sünn geiht to Beer'—'the sun goes to beer.'" But the "Beer" is the same as the Anglo-Saxon

*bær*, a bier or portable bed, and has nothing to do whatever with malt liquor. It is possible, indeed, that the writer may intend the statement as a jest; but, if so, it is a very sorry attempt at pleasantry.

#### TENNYSON'S CRADLE HYMN.

[WRITTEN SAXONIC.]

[We give this little poem in the dress of which one of our correspondents wrote in a previous number. We think that our readers will have no difficulty in making a translation.]

Hwot duz litl burdi sé,  
In hvr nest at pip ov dé?  
Let mí flai, sez litl burdi,  
Múger, let mí flai awé.  
Burdí, reet a litl longer,  
Til æt litl winz ar stronger;  
Só cī reste a litl longer,  
Gien cī flaix awé.

Hwot duz litl bébi sé,  
In hvr bed at pip ov dé?  
Bébi sez, laik litl burdi,  
Let mí raiz and flai awé.  
Bébi, slíp a litl longer,  
Til æt litl limz ar stronger;  
If cī slíp a litl longer,  
Bébi tú çal flai awé.

#### A LOSS.

THE death of the Rev. Dr. Hubbard Winslow is a loss to the educational interest of the country that will be long felt and remembered. As a teacher he was not surpassed in his power of imparting instruction, and in commanding the respect and affection of those committed to his charge; as an author he produced much that is permanent and valuable; as a man he was noted for Christian worth and a Christian walk through life. Devoted to his profession and to education, he brought to the practice of one, and the progress of the other, the whole force of a mind of no common order, and an education far above the average of that which instructors possess. To the pedagogic profession, and hence to the community, his loss is severe.

## SCIENCE AND THE ARTS.

—M. Millou, at the meeting of the French Academy, July 25th, announced a new mode of destroying organic matters present with mineral matters. If the mixed substances are first heated in a retort with sulphuric acid, and then ignited in a platinum crucible, nitric acid being dropped in occasionally, the organic matters will be perfectly destroyed, and a white residue left. Of course, under these circumstances, carbonates, chlorides, iodides, and bromides, as well as organic salts, are destroyed, and sulphates left in their place.

—By means of the chronoscope, M. Hirsh has concluded that nerves in men transmit their impressions at the rate of 34 metres (1 metre = 39.37 feet), per second. M. Heinholtz estimates that in the motor nerves of a frog the velocity is 190 feet per second.

—On examining the flame of the gas supplied in Munich, Prof. Vogel remarked a pale sodium line, which was not observed when the gas had been passed through sulphuric acid. On analyzing afterwards the deposit on the surface of a copper burner, which had been in use a year, the professor found a considerable proportion of sulphate of soda.

—M. E. Kopp has discovered a double chromate of potassa and ammonia, which will eventually prove of great service in photography. The salt is of a light orange color, but exposure turns it brown. The image is composed of chromate of chromium (Cr. 2, O. 3, Cr. O. 3).

—MM. Wohler and G. Rose have been making experiments on the coloring matter of the emerald. Lewry, in 1858, asserted that this matter was organic, and could be destroyed by heat. These gentlemen kept an emerald for an hour at the temperature of melted copper, and found that, although the stone became opaque, its color was unaffected. They then fused some colorless glass with an exceedingly small quantity of

chromium, and obtained a color exactly like that of the emerald. They therefore consider this substance the coloring agent, while, however, they do not wholly deny the absence of some organic matter.

—In *Cosmos*, M. Morid gives a process for recovering writing on paper or parchment. The substance written on is first left for some time in contact with distilled water. It is then placed for five seconds in a solution of oxalic acid (1 to 100); next, after washing, it is placed in a vessel containing solution of gallic acid (1 to 30); and finally washed again and dried. The process should be carried forward with care and promptness to avoid any accidental discoloration of the paper.

—As compared with that of anthracite coal the power of petroleum is only twelve per cent. greater. Its composition is identical with that of oil of turpentine. In consideration of the present high price of petroleum it will be impossible, by any improved mode of burning, to produce steam by it more economically than by coal.

—The color test for strychnine is not infallible. Naphthalidam, an organic base produced from naphthalin, will also produce a purple color when brought into contact with bi-chromate of potash and sulphuric acid.

—M. Coste thus sums up an important memoir recently presented to the French Academy on the development of ciliated Infusoria. In several points the facts he announces are in direct opposition to those enunciated by M. Pouchet, and relied upon by him in support of the spontaneous generation hypothesis. (1.) Infusoria make their appearance in an infusion long before the pellicle falsely called *stroma*—a name which attributes a function to it that it does not possess. (2.) They are introduced either as eggs or cysts with the hay, moss, or leaves of which the infusion is made. (3.) Although the *stroma* is produced in

infusions made with substances which are not exposed to the air—such as the pulp of apple and of fruits—infusoria are never found in such infusions if the vessel be covered with a piece of glass. Nevertheless, if, after ten or twenty days, no infusorium be visible, and two or three kolpods, or chilodons, or glaucomas be introduced, these species will soon show themselves in prodigious numbers. This rapid invasion of an infusion by ciliated infusoria is a consequence of their mode of immediate multiplication by division. (5.) Some—such as the glaucomas, chilodons, and paramecia—divide themselves without encysting; others, like the kolpods, encyst themselves before division. (6.) After multiplying by division in the interior of their cyst, the kolpods encyst themselves again, and remain in that state until the infusion is completely dried up, and they return to life only after a fresh moistening. (7.) Filters allow small infusoria—such as the kolpods, chilodons, etc., their cysts and their eggs—to pass through them.

—D. Endleton, M. D., has been investigating the peculiarities of the Chimpanzee. After careful anatomical examination of its organs he comes to the same conclusions with Dr. Huxley concerning its relations to man. It is not properly quadrumanous, but possesses four prehensile extremities, two hands and two feet. The brain differs from that of man only in size and weight, and, therefore, in the smaller size and extent of its cerebral convolutions. The same parts, without exception, exist in both brains. The cerebral matter has not yet been submitted to microscopical examination, so that it is impossible to decide whether in this there exists any material distinction.

—After much investigation, the scientific men of Europe have concluded that the extinct mammalia were not simultaneously destroyed by a cataclysm or any other catastrophe, but that they successively disappeared. Taking this view of the case, M. Lartet (who, with M. Christy, has of late been engaged in some important and interesting investigations concerning the "cave-men") has formed a paleon-

ological chronology. An interesting article, in this connection, appeared in the *Natural History Review* for July.

—There has been sent to us a clipping from a country paper, which gives an account of a meteorite, which fell lately in France. Besides the ordinary constituents of such stones, it contained a fibrous felt-like substance, which proved to be vegetable in its character. All Europe, according to the statement, is flocking to see the wonder. This is certainly curious, if true.

—According to A. Reynolds, in the *Chemical News*, a mixture of nitric and sulphuric acid dissolves gold to some extent.

—A process for restoring oil-paintings has been discovered by Prof. Pettinkofer of Munich. According to his view, the decay results from cessation of molecular cohesion: the manner of restoring this is to expose the painting to an atmosphere saturated with vapor of alcohol, which acts on the resinous particles of the color and produces the desired result.

—A letter was lately published from Sir David Brewster, on a curious optical phenomenon that had occurred in the construction of a diamond lens. The diamond, previous to working, had all the appearance of internal brilliancy; but, after being polished, it presented a series of stratified shades, which rendered it useless for the required purpose. It appeared that lapidaries were well-informed as to this peculiarity of diamonds. On a minute examination of this phenomenon, it appeared that these different shades occurred in regular strata, each section being about the one-hundredth part of an inch, and each stratum having a different focus, and being of a different degree of hardness and specific gravity. The inferences drawn from these facts were—that the diamond was a vegetable substance, and that its parts must have been held in solution, and subjected to different degrees of pressure at different stages of existence.

—M. Burnouf recommends, in *Le Belier*, the following method of preserving eggs. Dissolve in two parts of warm oil one part of beeswax, and, with the end of the finger, cover each egg with a thin layer of the pomade. The eggshell, by degrees, absorbs the oil, and each of the pores becomes filled with the wax, which hermetically seals them. M. Burnouf affirms that he has eaten eggs preserved thus for two years, and thinks also that in this way the germ might be preserved for a considerable period.

—MM. Millon and Commaille have discovered a new albumenoid substance in milk. They separated casein from the milk by means of acetic acid, filtered the liquor, and, after heating it, obtained a new coagulum, which they found to possess the external characteristics of albumen, and also to contain the same amount of nitrogen. They call the substance *lactoprotein*. There appears to be but a small quantity of this in milk, but it may be precipitated by careful addition of the acid nitrate of mercury.

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### MISCELLANY.

— Among the architectural works recently erected at Jerusalem, an immense building, lately added by the Russians, deserves special mention. It consists of a church, an episcopal palace, a pilgrims' house, a hospital, and houses for lay and clerical officials, among which is also that of the Russian Consulate. The expenses amounted to about £110,000, towards which the Emperor alone contributed 200,000 roubles. The design is by a German architect living in Russia—Mr. Eppinger.

— In a recent lecture before the English Geographical Society, Sir Roderick Murchison said, that the discovery of that great water-basin, the Victoria Nyanza, in the heart of Equatorial Africa, and the proof that a great stream flowed out from its northern extremity, which Speke and Grant followed, and stated to be the White Nile, was, as he observed last year, truly a great feat. But, in warmly praising and honoring the men who accomplished it, they were not yet satisfied as geographers with that their single line of march, and the valuable data which they fixed regarding the upper waters of the Nile. They looked naturally to other efforts which must be made to dispel all skepticism. The Council of the Society had therefore come to the conclusion that the physical geography of all that region, together with the shores of the Victoria Nyanza, should be further explored, and the nature and

extent of the various affluents of that vast body of water determined; that the regions between the waters of the Lake Luta-Nzige and the Lake Tanganyika of Burton and Speke should be examined, in order to determine if there were not there (as some geographers thought probable) other sources of supply for the White Nile coming from that region to the west of the Victoria Nyanza; and, finally, that, if possible, the Upper White Nile of Speke and Grant should be traced continuously from the lake to that point where, according to their map, it was made to join the end of the Lake Luta-Nzige. Having considered that point, the Council had adopted his (the President's) proposal to fit out an Expedition to clear away all such obscurities by ascending the White Nile; and not, as previously, by any efforts from Zanzibar and the eastern coast of Africa. The difficulties encountered by Speke and Grant in passing through that tract, and the apparent impossibility of establishing any regular traffic between the east coast and the central kingdoms, had induced the Council to prefer to any other line of research an effort to render the great White Nile a channel of intercourse and commerce between the prolific interior and the traders of the Mediterranean sea. For such an expedition the Council were ready to advance £1000. If the miserable natives were rescued from their present disorders, legitimate commerce would soon arise between the Equatorial kings and the



merchants of Cairo and the Mediterranean; and the great Nile, which, for thousands of years, has alone served to enrich the soil of Lower Egypt, would eventually become a highway of intercourse with Europe.

—The Abbé Moigno, at his last lecture on the Progress of Science, in the hall of the Société d'Encouragement, has set an example which we hope soon to see generally followed. Instead of being illuminated by the innumerable jets of gas with which the hall is provided, a single electric light, placed in a central position, lit the room in the most perfect manner. The consequence was that, although the thermometer was above one hundred degrees out of doors, no one was inconvenienced by the heat.

—Dr. De Hahn, Consul-general of Austria, accompanied by Dr. Schmidt, the Director of the Athens Observatory, and M. Ziller, have recently been making some explorations where it is supposed that Troy once stood. We learn from a letter of Count Marschall's in *Les Mondes* that they have been fortunate enough to trace the walls and some portion of the interior buildings of the Acropolis, besides other remains. Dr. Schmidt is now engaged upon recording the physico-geographical part of the expedition.

—In June or July, 1865, a monster German music-festival is to take place at Dresden, for which the preliminary steps have been taken already. The most renowned composers of Germany will be asked to send in compositions by a certain date, which they, in case of acceptance by the committee, will have to conduct personally. Some old classical music will likewise be produced.

—A curious experiment is noticed in a foreign journal as having been recently made at Dunkirk and Ostend, to fish by submarine light. The light employed is the electric light, and the current was first obtained from a battery on Bunsen's principle, composed of about fifty elements, and it succeeded tolerably well; but its

employment was attended with much inconvenience. It was then determined to repeat the attempt with a magneto-electro machine. The experiments had a double object—(1) to prove how the light produced by the machine would act under water, and (2) to discover the effect the light would produce on the fish. The first object was completely accomplished; and it is now demonstrated that magneto-electric machines and the light they produce are applicable to all submarine works. In fact, this light was constant at a depth of one hundred and eighty feet, and it was visible over a large surface. The magneto-electric machine was placed at a distance of more than three hundred feet from the lantern.

—Rev. John W. Henry Canoll, in an article in the *Historical Magazine*, attributes to the late John C. Spencer the virtual authorship of De Toqueville's "Democracy in America," giving explicit statements to that effect recently made by the late Alexandre Vattemare, of Paris.

—The prize of fifty thousand francs, offered by the Emperor Napoleon for the most useful application of electricity, has at length been awarded to M. Ruhmkorff for his induction coil. The King of Hanover, having heard of the award, has forwarded to M. Ruhmkorff a large gold medal *pour la mérite*.

—The "Book of Days" notices some curious instances of literary deception by Steevens, the commentator on Shakspeare. He scrupled not, when it served his purpose, to invent quotations from old books that existed only in his imagination, and would deduce therefrom corroboration of his own views. Among other things, he invented the famous description of the poisonous upas-tree of Java, and the effluvia killing all things near it. This account, credited by Darwin, and introduced in his "Botanic Garden," spread through general literature as a fact; until artists at last were induced to present pictures of the tree and the deadly scene around it. Steevens chose the magazines, or popular

newspapers, for the promulgation of his inventions, and signed them with names calculated to disarm suspicion. Many of the generally received "facts" of history owe their origin to like deception. From some of these Niebuhr drew their robe of importance, and other writers have, from time to time, engaged in the same task.

—A new expedition to the Nile is being organized by the Venetian Miani. On his application, the Austrian Government proposed a subvention of six thousand florins, which, however, was refused by the Diet, and the necessary funds have

accordingly been supplied by a subscription, opened by several consuls in Alexandria, and taken up by the most eminent business houses in Trieste. Venice made it a very natural reproach to Miani that he had applied first to the Austrian Government, yet furnished him with glass and similar wares which will serve in the interior of the country instead of money. The Emperor of Austria supplied the expedition with arms. Miani's knowledge of the country and language is considered a good omen for the success of the expedition, especially by people living in Egypt, though the German geographers are less sanguine.

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### EDUCATIONAL INTELLIGENCE.

—The Franklin Globes have lately had the new Territories added to the Terrestrial Maps.

—A correspondent at St. Louis informs us that we have omitted, in a list of normal schools we once published, the name of the Normal School at St. Louis, which is supported by the city, with the aid of the School Fund, and forms part of the Public School system there. He says:

"This school has been in operation ever since the autumn of 1857, when it was opened under the principalship of Richard Edwards, first Principal of the Normal School at Salem, Massachusetts. It numbers at present over fifty pupils, and supplies the city with teachers, graduating a class every year. It is not a department of the High School, but a wholly independent institution, and, at least, deserves to be enumerated among normal schools."

—We have the published proceedings of the great meeting of the alumni of various colleges, held at the College of California, last May. They embrace the formal oration of the day, by John B. Felton, a poem, by C. T. H. Palmer, and numerous after-dinner speeches by distinguished guests. The oration was a very good one, the poem had very little merit, and the after-dinner speeches were clever

off-hand affairs, conferring great credit on the speakers. We are glad to learn that the prospects of the College of California are of the most encouraging kind.

—The Normal School of Minnesota is now in charge of Professor W. F. Phelps, formerly Principal of the Normal School of New Jersey. Professor Phelps is not only an accomplished scholar, but has a high order of executive talent, without which scholarship fails to be useful in institutions for normal instruction. The State of Minnesota will soon find, from the fruits of his vigorous management, that they have been fortunate in their choice of a Principal for their Normal school.

—The normal colleges or training schools in Scotland have received the announcement of their incomes for the year, under the Minute, 21st March, 1863. To all of them the Government grant this year is much smaller than for some time back. Provision has been made for this by a sweeping reduction in the number of students, viz., 769 to 448. But some of them will find it extremely difficult to tide over 1864, from what appears to be a grossly unjust clause in the Minute of 21st March. That minute enacted, that the grants should never, in any case, exceed

those of 1862. But this decision was arrived at only after a larger number of students, necessitating, of course, increased payments, had been sanctioned for 1863. The result was that the training school authorities had either to dismiss the excess of students, or submit to have their grant for 1864 reduced by the excess of 1863 above 1862. In the two Free-Church col-

leges this amounts to £1,198. In all the training schools it is found necessary to make reductions in staff. In the Free-Church one in Edinburgh, the staff has been entirely remodeled, and in the Established School in Edinburgh, and the Free-Church one in Glasgow, vacancies occurring at the present time are not to be filled up.

### NEW BOOKS.

Those who have examined the first series of Dwight's "Modern Philology," will be pleased to learn that a second has been issued.<sup>1</sup> The present volume is distinguished by the same care, candor, and learning that marked its predecessor. It opens with an exhaustive essay upon Comparative Phonology, which occupies two hundred and sixty-three pages, and displays an amount of research creditable to both the industry and intellect of the author. This is followed by "Comparative English Etymology in its Classical Features," the result of nice discrimination and unwearied labor. A synopsis of illustrative examples in Comparative English Etymology is appended, followed by Greek, Latin, and English etymological indices. We have not the space for that thorough analysis and full review which the book deserves; and can only commend it, in general terms, to the attention of the student of our language, of whose library it is a necessary part.

Since the appearance of "Eothen" we have no books of travel so racy and reliable as those of Mr. Browne.<sup>2</sup> Adhering closely to facts, he contrives to add interest to the driest detail, and extract humor from the dullest events. "Crusoe's Island," which gives title to the book, is by no means his worst production, but it is also not his best. It contains an account of a visit to the isle of Juan Fernandez—by the by, Robinson Crusoe's island was not Juan Fernandez, but was situated at the mouth of the Orinoco—and introduces some queer characters. "A Dangerous Journey," which is the second paper, is marked by exciting incidents, and is graphically told. "Observations in Office" is also clever; but the best part of the book is that devoted to the mining district of

Washoe. This is not only well written, but the style is characteristic. The exposition of the folly of some and the knavery of other adventurers, the keen sense of the ludicrous which marks the writer, the accurate exhibition of mining life, give "A Peep at Washoe" a value far beyond that which it bears as a lively account of personal adventure. The book is neatly printed, and contains a hundred and fifteen capital illustrations, designed with spirit and engraved with skill.

The number of new treatises on Arithmetic cannot well be counted. Several others are said to be in press. We think, however, that Mr. Felter has, to a great extent, occupied the ground. A new edition of his arithmetical series is before us;<sup>3</sup> and, although, as the standard work in the public schools, and used by numbers in private instruction, it requires no close analysis of its method, it may be proper to review the peculiarities of Mr. Felter's system. These seem to consist in the perfect gradation of the exercises—the systematic and progressive arrangement, and the adaptation of definitions, rules, and exercises, to the comprehension of pupils. The suggestions to teachers are pertinent and valuable. We do not agree with Mr. Felter in his numeration entirely. A thousand millions is a thousand millions, and not a billion, which latter sum is a million of millions. Thus, 1,565,378,423,654 should not be noted as one trillion, five hundred and sixty-five billions, three hundred and seventy-eight millions, four hundred and twenty-three thousand, six hundred and fifty-four; but as one billion, five hundred and sixty-five thousand three hundred and seventy-eight millions, four hundred and twenty-three thousand, six

(1) MODERN PHILOLOGY; ITS DISCOVERIES, HISTORY, AND INFLUENCE. By BENJAMIN W. DWIGHT. Second series. New York: C. Scribner. 8vo, pp. xviii-555.

(2) CRUSOE'S ISLAND: A RAMBLE IN THE FOOTSTEPS OF ALEXANDER SELKIRK. With sketches of Adventure in California and Washoe. By J. ROSS BROWNE. New York: Harper & Brothers. 16mo, pp. 436.

(3) NATURAL SERIES. 1. An Introduction to the "Arithmetical Analysis," designed for Primary Schools, containing mental, slate, and blackboard exercises. By S. A. FELTER, A. M. New York: C. Scribner. 18mo, pp. 136.  
2. The Analysis of Written Arithmetic. Book First. New York: C. Scribner. 16mo, pp. xii-316.  
3. The Same. Book Second. New York: C. Scribner. 16mo, pp. x-394.

hundred and fifty-four. Mr. Felter, however, sins in a large and respectable company; the question is, after all, a moot one, and the defect too slight to merit more than a passing notice. It does not seriously detract from the general merit of a series of most excellent text-books.

Miss Yonge's clever summary of ancient history has been reproduced in this country from the latest London edition,<sup>4</sup> in a manner which reflects credit upon the judgment and critical ability of the American editor. Passages of doubtful truth have been wisely omitted, and some additional events have been inserted; while a few passages have been re-written in a more simple style. It would have been proper for the editor to have made a direct acknowledgment of these changes, at the point of alteration, as well as a general statement in the preface. The volume will prove a valuable text-book in our public schools, and provoke a disposition, on the part of pupils, to investigate the subject more fully.

A very excellent little treatise on elementary arithmetic is that of Walton,<sup>5</sup> which covers the five fundamental operations, and is accompanied by a card, containing a table which materially assists the pupil. For teachers, no matter what series of text-books they use in their schools, this little book will be found to be an efficient aid.

The new Readers of Hillard<sup>6</sup> will meet with much favor from teachers. They are filled with carefully selected matter, which is illustrated effectively by finely-executed wood engravings, and in addition to preliminary information on enunciation and elementary sounds, each lesson is preceded by a list of prominent words, a portion of which are defined. As in most books of the kind, the definitions are not always clear, and frequently the synonyms only of the word is appended. There are some improvements, however, over the old series, which has been long approved by a number of teachers.

Among the writers of light literature the Trollope family have attained a more than respectable position. The mother, who wrote many years since a rather severe commentary upon our domestic manners, is not so favorably known as her sons. Of these the eldest is perhaps the most popular. The other possesses power and skill as a novelist,

and his last production<sup>7</sup> is not calculated to weaken his reputation. The characters are clearly drawn, the incidents natural, but not commonplace, and the dialogue characteristic. The author, in giving us the picture of two sisters, with all the minuteness of detail of which he is capable, evidently intended we should love Kate and detest Margaret Lindisfarn. If such were his intent, he has succeeded most fully. Kate Lindisfarn is thoroughly loveable, while her sister is about the most detestable young lady, to have the position of a lady, in the whole realm of fiction. In any other situation she would have been an adventures; but, as in the novel, an unsuccessful one. There is nothing unnatural or strained in the delineation of her peculiarities. There are an abundance of Margaret Lindisfarns in the world, as the experience of any man of society, who has passed the middle age, can testify. Matthew Lindisfarn is very well drawn too; and so is Falconer; but the main interest centers upon the sisters. There is one thing more. Every author has a right to choose his own words, and take the responsibility therefor; but we would have felt personally obliged to Mr. T. Adolphus Trollope had he failed to have used the word "rile"—which is not English—seriously, and on his own account, in two places. It would have been as easy to have said "vexed" or "annoyed," and certainly would have been more elegant.

While there are several excellent elementary treatises on Drawing, some of which we notice elsewhere in this number, there have been few of merit, where the principles were applied in a simple way, to the delineation of the human figure. The want thus existing seems to be well supplied by Rimmer's little book, just issued.<sup>8</sup> The instruction is adapted to the youngest pupils, and we take pleasure in calling the attention of parents and teachers to what they have felt in need of for a long time.

A second edition of Sadler's "Petits Cours de Versims," revised and annotated by Professor Gillette, is announced as nearly ready. The work, which is admirably adapted to that class of pupils who need practice in French composition, assists in overcoming the difficulties of passing from the routine of grammatical exercises to their application. To pupils who are somewhat in advance it is invaluable. It impresses thoroughly on the student's mind the peculiarities of the French language which students are apt to overlook or have forgotten. The merit of the work will be enhanced by the careful supervision likely to be given it by the accomplished editor.

(4) LANDMARKS OF HISTORY. Ancient History. From the Earliest Times to the Mahometan Conquest. By Miss YONGE. First American edition. Philadelphia: Fred. Leypoldt. 16mo, pp. 240.

(5) DICTATION EXERCISES. A Key to Walton's Table for Practice in the Fundamental Operations of Arithmetic. By G. A. WALTON. Boston: Brewer & Tileston. 18mo, pp. 51.

(6) 1. THE PRIMER, OR FIRST READER. By G. S. HILLARD & L. J. CAMPBELL. Boston: Brewer & Tileston. 18mo, pp. 45.

2. THE SECOND READER. For Primary Schools. By G. S. HILLARD & L. J. CAMPBELL. Boston: Brewer & Tileston. 18mo, pp. 120.

3. THE THIRD READER. For Primary Schools. By G. S. HILLARD & L. J. CAMPBELL. Boston: Brewer & Tileston. 16mo, pp. 204.

(7) LINDISFARN CHASE. A Novel. By T. ADOLPHUS TROLLOPE. New York: Harper & Brothers. Imp. 8vo, pp. 274.

(8) THE ELEMENTS OF DESIGN: FOR THE USE OF PARENTS AND TEACHERS. By W. RIMMER. Boston: S. R. Urblino. 8vo, pp. 30. With 36 plates.